

CLAIMS

What is claimed is:

- 5 1. A data processing network comprising:
- a first multi-processor system having
- a first set of processors; and
- 10 a first set of optical network interfaces electrically coupled to said
 first set of processors;
- a second multi-processor system having
- 15 a second set of processors; and
- a second set of optical network interfaces electrically coupled to
 said second set of processors; and
- 20 an optical cable connected between said first set of optical network
 interfaces and said second set of optical network interfaces, wherein said first
 multi-processor system communicates with said second multi-processor system
 via said optical cable.

2. The data processing network of Claim 1, wherein said first mutli-processor system further includes an optical network connected between said first set of optical network interfaces and said optical cable.

5 3. The data processing network of Claim 1, wherein said second mutli-processor system further includes an optical network connected between said second set of optical network interfaces and said optical cable.

10 4. The data processing network of Claim 1, wherein said first set of processors is a plurality of gateways.

5. The data processing network of Claim 1, wherein said first set of processors is a plurality of field programmable gate arrays

15 6. The data processing network of Claim 1, wherein said first set of processors is a plurality of sensors.

20 7. The data processing network of Claim 1, wherein said second set of processors is a plurality of gateways.

8. The data processing network of Claim 1, wherein said second set of processors is a plurality of field programmable gate arrays

25 9. The data processing network of Claim 1, wherein said second set of processors is a plurality of sensors.

10. An optical network interface comprising:

an optical component having

5 an optical interface;

a detector array coupled to said optical interface; and

10 a vertical cavity surface emitting laser (VCSEL) array; and

an electrical component having

a decoder array and an encoder array;

15 a receive router and a send router;

a receive buffer array and a send buffer array; and

20 an electrical interface.

11. The optical network interface of Claim 1, wherein said optical component and said electrical component are connected to each other via bump bonding.